WATHIQ

AN INTERVIEW/PRESENTATION ANALYSIS APP

SDAIA'S Data Science and AI T5 Bootcamp Capstone Project

Adam Al-Abduljabar   **Mana Saleh Al-Aqeel**   **Moudi Al-Hazzaa**   **Raghad Al-Qithmi**

Table of Contents

- Introduction
- Aim
- Body Language
- Hand Movements
- Body Movements

- Eye Contact
- Emotion Detection
- Audio Analysis
- Full Text
- OpenAI

- Models
- Challenges
- Future Directions
- Conclusion
- Our Team

How Does Stress Affect Our Performance?

INTRODUCTION

Saudi Arabia's job market is competitive due to Vision 2030. Employers now seek strong communication skills. The Wathiq System uses technology to improve interview and presentation abilities, enhancing job seekers' prospects.

Aim

This project aims to analyze various aspects of human behavior from a video including body language, hand movement, stutter detction, eye contact, emotion detection, as well as transcribe and summarize the spoken content.

Body Language

Body language is the nonverbal communication expressed through gestures, facial expressions, posture, and other physical behaviors.

Output

- The head looks to the left: 17.14%
- Hands behind the back: 23.89%
- Normal: 34.84%
- Head looks down: 9.50%
- Hand on waist: 1.21%
- Hands joined together: 12.29%
- The head looks to the right: 0.35%

Hand Movements

Hand movements are a key aspect of body language that convey emotions, emphasize points, and facilitate communication.

Output

- Average Movement per Frame: 0.08

- Presenter's hands are relatively stationary. Consider using more gestures to engage the audience.

SDAIA
الهيئة السعودية للبيانات
والذكاء الاصطناعي
Saudi Data & AI Authority

أكاديمية طويق
TUWAIQ ACADEMY

Body Movements

Body movements are nonverbal cues, including gestures, posture shifts, and overall physical actions, that communicate attitudes, emotions, and reactions.

Output

- Total Movement Distance: 9518.00
- Average Movement per Frame: 1.51
- Assessment: Presenter is relatively stationary.
- Consider using more gestures and movements to engage the audience.

Recommendation

- Recommendations for body language, hand movement, and body movement

- Incorporate more hand gestures and body movements to engage the audience.

- Practice using a variety of gestures to enhance the presentation delivery.

- Be conscious of body language and aim to use movements to emphasize key points effectively.

Eye Contact

Eye contact is a powerful form of nonverbal communication that can convey confidence, interest, sincerity, or dominance, depending on its intensity and context.

Output

- Contact: 9.78%
- Not contact: 89.18%

Recommendation

- Increase eye contact with the audience during the presentation to build a stronger connection and establish credibility.

Emotion Detection

Face emotion refers to the expression of feelings through facial movements and features.

Output

- Surprise: 47.20%
- Fear: 27.27%
- Sad: 20.06%
- Neutral: 1.36%
- Happy: 0.05%
- Angry: 4.06%

Recommendation

- Consider incorporating more elements that evoke surprise and fear to enhance audience engagement.
- Focus on addressing the emotions of surprise and fear in the presentation content to captivate the audience's attention.

Audio Analysis

Audio analysis involves examining sound signals to extract meaningful information, such as speech recognition, emotion detection, and sound classification.

Output

- Blocks: 75.57%
- Repetition: 20.41%
- Nonstutter: 3.87%
- Prolongation: 0.15%

Recommendation

- Work on reducing the occurrences of stuttering blocks during the presentation.
- Minimize the repetitions to improve the overall flow and impact.
- Avoid using prolongations that may distract from the message.
- Aim to primarily exhibit fluent, non-stutter speech patterns.

Full Text

Converting audio to text involves noise, accents, specialized terms, privacy, and performance optimization. Techniques like keyword extraction and sentiment analysis are needed for user input.

Main Topcis

- Definition and Concept, History and Evolution, Benefits, Mechanism, Risks, Future Implications

Recommendation

- Clarify the definition and concept of cloud computing for a better understanding
- Provide a brief overview of the history and evolution of cloud computing
- Highlight the benefits of cloud computing, especially for small and medium companies
- Explain the mechanism of cloud computing using virtualization and server clusters
- Address the risks associated with security and data privacy in cloud computing

SDAIA
الهيئة السعودية للبيانات
والذكاء الاصطناعي
Saudi Data & AI Authority

أكاديمية طـويـق
TUWAIQ ACADEMY

OpenAI

Utilizing the OpenAI API key for generating recommendations can enhance decision-making and productivity.

SDAIA
الهيئة السعودية للبيانات
والذكاء الاصطناعي
Saudi Data & AI Authority

أكاديمية طـويـق
TUWAIQ ACADEMY

- **Body language recognition** ⟶

- **Eye contact detection** ⟶

Employing Mediapipe for capturing body language and eye contact data, which is then stored in a CSV format and utilized for training models, facilitates advanced analysis of nonverbal communication signals, enhancing the sophistication and depth of insights derived from the data.

- **Hand movement detection** ⟶

Leveraging Mediapipe to quantify hand movements, such as calculating the frequency or intensity of gestures, enables precise analysis and interpretation of nonverbal communication cues.

SDAIA
الهيئة السعودية للبيانات
والذكاء الاصطناعي
Saudi Data & AI Authority

أكاديمية طــويــق
TUWAIQ ACADEMY

- **Emotion detection** →

  DeepFace enhances emotion detection by analyzing facial expressions with high accuracy, providing valuable insights into human emotions.

- **Audio processing** →

  Utilizing the model "HareemFatima/distilhubert-finetuned-stutterdetection" for audio analysis enables sophisticated detection and interpretation of speech patterns, particularly focusing on identifying instances of stuttering, thereby enhancing the understanding and support for individuals with speech impediments.

- **Full Text** →

  Utilizing Whisper for audio-to-text conversion streamlines the transcription process, enabling efficient extraction of textual information from spoken audio data.

Challenges

- Coherence issues
- High computational demands
- Complex evaluation metrics
- Finding suitable datasets
- TensorFlow on Windows
- Adapting pre-trained models

Future Work

- Enhancing data diversity.
- Supporting Arabic language.
- Incorporating advanced machine learning.
- Improving real-time processing.
- Enhancing model integration.
- Maintaining accuracy across behavioral analysis tasks.

Conclusion

The Wathiq Interview/Presentation Analysis System enhances job seekers' communication skills, performance, and success in Saudi Arabia's knowledge-based economy, using advanced technologies for feedback on non-verbal and verbal behavior.

Our Team

Adam Al-Abduljabar

Mana Saleh Al-Aqeel

Moudi Al-Hazzaa

Raghad Al-Qithmi

THANK YOU

FOR YOUR TIME AND ATTENTION!